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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/733,392	12/07/2000	Richard Alan Haase	0170SS-45347	7432

7590

08/10/2005

Richard A. Haase  
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EXAMINER
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BARRY, CHESTER T

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.  
90/005,710  
09/733,392

Applicant(s)  
HAASE, RICHARD ALAN

Examiner  
Chester T. Barry

Art Unit  
1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-16, 19, 22, 24-38, 40, 41, 44-48, 51-55, 58-61 and 67-73 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 4-8, 10-14, 19, 22, 24-25, 27-28, 33-35, 37-38, 40-41, 45-48, 52-55, 59-61, 67, 69-70, 73 is/are allowed.
- 6) ☒ Claim(s) 2, 3, 15, 16, 26, 29-32, 36, 44, 51, 58, 68 and 72 is/are rejected.
- 7) ☒ Claim(s) 71 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

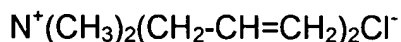
"Allyl" / DADMAC "variety"

Claims 2, 3, 26, 30, 36, 44, 51, 58, 68 are rejected under 35 USC Sec. 112(2<sup>nd</sup>) for failing to particularly point out and distinctly claim the invention.

As previously stated by the examiner, allyl means the radical 2-propenyl, i.e., the radical



Di-allyl di-methyl ammonium chloride is, therefore,



The meaning of "allyl" in the context of diallyl dimethyl ammonium chloride does not permit one to insert one or more methylene groups between the allyl group and the amine group.

The scope of claims reciting the phrase, "wherein the . . . compound is of the . . . di-allyl di-methyl ammonium chloride (DADMAC) variety," or the phrase, "wherein the . . . compound is of the . . . epichlorohydrin di-methyl amine (epi-DMA) variety," is unreasonably imprecise for it is not reasonably clear which compounds other than DADMAC itself are "of the DADMAC variety" and which compounds other than epi-DMA are of the "epi-DMA variety" given the fact, acknowledged by applicant / owner, that di-allyl di-methyl ammonium chloride (DADMAC) is but a single compound and that epichlorohydrin di-methyl amine (epi-DMA) is also but a single compound.<sup>2</sup> It follows

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<sup>1</sup> Hack's Chemical Dictionary, "allyl."

<sup>2</sup> Owner/applicant's Response of 5/9/05 at page 26 of 42, "Applicant agrees with the Examiner that DADMAC itself is a single compound . . . [and] that epi-DMA itself is a single compound."

then that Applicant / owner has in effect admitted that the terms DADMAC and epi-DMA do not describe genres to which more than one compound belongs.

The examiner's position with respect to applicant / owner's use of the term "variety" is substantially the same as the position taken in response to applicant / owner's use of the "family of compounds" phraseology before. Applicant / owner's shift from "family of compounds" to "variety" is a distinction without a difference. The issue is not whether applicant / owner has support of the "variety" phraseology: That he clearly has. The issue is that the DADMAC variety / epi-DMA variety terminology is confusing and not reasonably clear to the skilled artisan for reasons substantially the same as those given in the previous Office action albeit in the context of the "family of compounds" phraseology.

The examiner agrees with applicant / owner that there exist many variants of the polyquaternary amine moiety, citing USP 5035808 to Hassick (page 24 or 42), but that fact does not illuminate what compounds **other than** DADMAC itself are recognized in this art as being of the "DADMAC variety." The prior art, e.g., Hassick '808, provides evidence that the art recognizes the existence of a variety of "water soluble di C<sub>1</sub> –C<sub>8</sub> alkyl diallyl ammonium polymer[s]" (Hassick '808 column 2 line 62 – column 3 line 2), but that recognition does not support applicant's position that there is recognition in the art of what is meant by the expression, "a compound of the di-allyl di-methyl ammonium chloride (DADMAC) variety." Importantly, Hassick '808 was referring to a genus of "di[-]alkyl diallyl ammonium polymers" without specification of the identity of the halide ion

and without specific identification of the dialkyl group. In contrast, applicant's terminology specifies the identity of the halide ion (chloride) and the alkyl group (dimethyl) to the point that a single compound (DADMAC) is left. At issue is what compounds other than DADMAC itself of "of the DADMAC variety." There is no recognition in the art of record what compounds (other than DADMAC) are species within applicant's alleged genus. Hassick '808 is evidence that DADMAC is a species of the genus of dialkyl diallyl ammonium polymers,<sup>3</sup> not that there is recognition in the art of what compounds other than DADMAC itself belong to the genus of "compounds of the DADMAC variety."

The Breslin declaration was carefully considered, but it does not resolve the issue. The examiner agrees that the phrase "compounds of the DADMAC variety" conjures up the notion of a genus of compounds having a similar characteristic, but the prior art and the disclosure fail to support an art-recognized understanding of what characteristic might group together different compounds, i.e., non-DADMAC compounds, into a genus of "compounds of the DADMAC variety." Therein lie the Sec.112, 2<sup>nd</sup> paragraph, problem: Reasonably clear notice to the public of what non-DADMAC compounds qualify nevertheless qualify as "of the DADMAC variety." Applicant / owner and declarant Breslin hint that such non-DADMAC compounds might be diallyl methyl-ethyl ammonium chloride or diallyl ethyl-ethyl ammonium chloride rather than diallyl dimethyl ammonium chloride. While these compounds are clearly

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<sup>3</sup> "The most preferred dialkyl diallyl ammonium polymer is a homo polymer of dimethyl diallyl ammonium chloride." Col 3 lines 1 – 2.

diallyl dialkyl ammonium chlorides, there is no support in the art to say that these compounds are recognized as being "of the DADMAC variety."

"One or both . . . solution, emulsion, or in dry form"

Sec. 112, 2<sup>nd</sup> Paragraph:

Claim 16 is rejected under 35 USC Sec. 112(2<sup>nd</sup> paragraph) for failing to particularly point out and distinctly claim the invention.

Claim 16 states that "one or both of the polyacrylamide and the polymeric quaternary ammonium compound are used in solution, emulsion or dry form." This wording covers the following possibilities:

- a) The polyacrylamide, but not the polymeric quaternary ammonium compound, is used in solution, emulsion, or dry form;
- b) The polymeric quaternary ammonium compound, but not the polyacrylamide, is used in solution, emulsion, or dry form;
- c) Both the polyacrylamide and the polymeric quaternary ammonium compound are used in solution, emulsion, or dry form.

With respect to possibility (c), it is not clear whether, to meet the claim limitations, both must be used in the same form, i.e., both used in solution form, both used in emulsion form, or both used in dry form, or whether the polymeric quaternary ammonium compound can be used in solution form so long as the polyacrylamide is used in either emulsion or dry form, or the polymeric quaternary ammonium compound

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can be used in emulsion form so long as the polyacrylamide is used in either solution or dry form, or the polymeric quaternary ammonium compound can be used in dry form so long as the polyacrylamide is used in either solution or emulsion form.

"One or both . . . solution, emulsion, or in dry form"

Sec. 112, 1st Paragraph, Lack of Description:

Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 16 states that "one or both of the polyacrylamide and the polymeric quaternary ammonium compound are used in solution, emulsion or dry form." This wording covers the following possibilities:

- a) The polyacrylamide, but not the polymeric quaternary ammonium compound, is used in solution, emulsion, or dry form;
- b) The polymeric quaternary ammonium compound, but not the polyacrylamide, is used in solution, emulsion, or dry form;
- c) Both the polyacrylamide and the polymeric quaternary ammonium compound are used in solution, emulsion, or dry form.

With respect to possibility (a), the application as originally filed fails to describe a form for adding polymeric quaternary ammonium compound other than solution, emulsion, or dry form. For want of description of a fourth form (i.e., not one of solution, emulsion, or dry form) for addition of the ammonium compound, applicant has not described the invention of claim 16 possibility (a).

With respect to possibility (b), the application as originally filed fails to describe a form for adding polyacrylamide other than solution, emulsion, or dry form. For want of description of a fourth form (i.e., not one of solution, emulsion, or dry form) for addition of polyacrylamide, applicant has not described the invention of claim 16 possibility (b).

“wherein the polyacrylamide is anionic instead of cationic”

Claim 29 is rejected under 35 USC Sec. 112(2<sup>nd</sup> paragraph) for failing to particularly point out and distinctly claim the invention. Claim 29 states that the polyacrylamide is “anionic instead of cationic.” Claim 29 depends from claim 22. Claim 22 requires that the polyacrylamide be cationic. 35 USC Sec. 112, fourth paragraph, requires that a claim drafted in dependent form, such as claim 29, include all of the limitations of the claim/s from which it depends, i.e., claim 22. It is unclear how the polyacrylamide used in the method of claim 29 can simultaneously be cationic (as required by claim 22 and 35 USC Sec. 112, fourth paragraph) and not cationic per claim 29. Correction is required.



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Claims 30 – 32, which depend from claims 29, are rejected under 35 USC Sec. 112(2<sup>nd</sup> paragraph) for the same reasons given immediately above with respect to claim 29.

“wherein the polyacrylamide is cationic or anionic”

Claim 72 is rejected under 35 USC Sec. 112(2<sup>nd</sup> paragraph) for failing to particularly point out and distinctly claim the invention. Claim 72 states that the polyacrylamide is “cationic or anionic.” Claim 72 depends from claim 22. Claim 22 requires that the polyacrylamide be cationic. It is unclear how the same polyacrylamide used in the method of claim 72 can simultaneously be both cationic (as required by claim 22 and claim 72 via 35 USC Sec. 112, fourth paragraph) and anionic per claim 72. Correction is required.

Other Sec. 112, 2<sup>nd</sup> Paragraph rejections

Claim 15 is rejected under 35 USC Sec. 112(2<sup>nd</sup>) for failing to particularly point out and distinctly claim the invention.

It is unclear whether the “polymeric quaternary ammonium compound, as the primary component” of claim 15 is the same compound as the “polymeric quaternary ammonium compound, as primary component” recited in claim 1, from which claim 15 depends. This rejection may be overcome by amending claim 15 as follows:

[A composition] The method for dewatering biological sludge according to claim 1, wherein [comprising] said polymeric quaternary ammonium compound[s, as primary component, and] is added along with a cationic polyacrylamide; and said polymeric quaternary ammonium compound and cationic polyacrylamide [components being] are present [in the composition in a ratio] to enable dewatering of the biological sludge [the composition to function as an agent for dewatering biological sludge from a thermophilic digestion process].

#### Claim Objection

Objection is made to Claim 71 because of the following informalities: Claim 71 recites the phrase, "in the range of at least about 5,000,000." A range is defined by a lower and an upper endpoint. The claim recites a lower endpoint, i.e., "about 5,000,000," but not an upper endpoint. Appropriate correction is required. It is suggested that the phrase "in the range" be deleted from claim 71.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

MERGED PROCEEDING

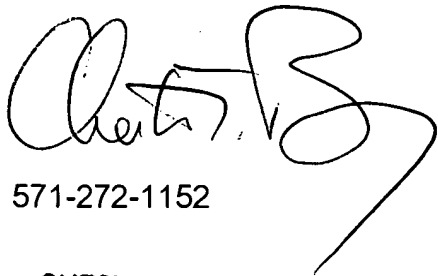
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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

A handwritten signature in black ink, appearing to read "Chestert T. Barry", with a large, stylized flourish extending from the end of the signature.

571-272-1152

**CHESTERT T. BARRY**  
**PRIMARY EXAMINER**